

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										



General Certificate of Secondary Education
Foundation Tier

Mathematics (Linear) B

4365/2F

Paper 2 Calculator

Practice Paper 2012 Specification (Set 2)

F

<p>For this paper you must have:</p> <ul style="list-style-type: none"> a calculator mathematical instruments. 	
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Time allowed

- 1 hour 45 minutes

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.
- If your calculator does not have a π button, take the value of π to be 3.14 unless another value is given in the question.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 105.
- The quality of your written communication is specifically assessed in questions 9(a), 18(a) and 20. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer booklet.
- Use a calculator where appropriate.

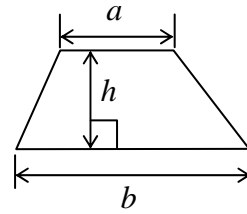
Advice

- In all calculations, show clearly how you work out your answer.

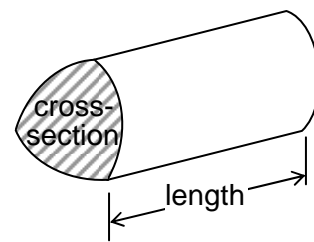
For Examiner's Use	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
16 – 17	
18 – 19	
20 – 21	
22 – 23	
24 – 25	
TOTAL	

Formulae Sheet: Foundation Tier

Area of trapezium = $\frac{1}{2}(a + b)h$

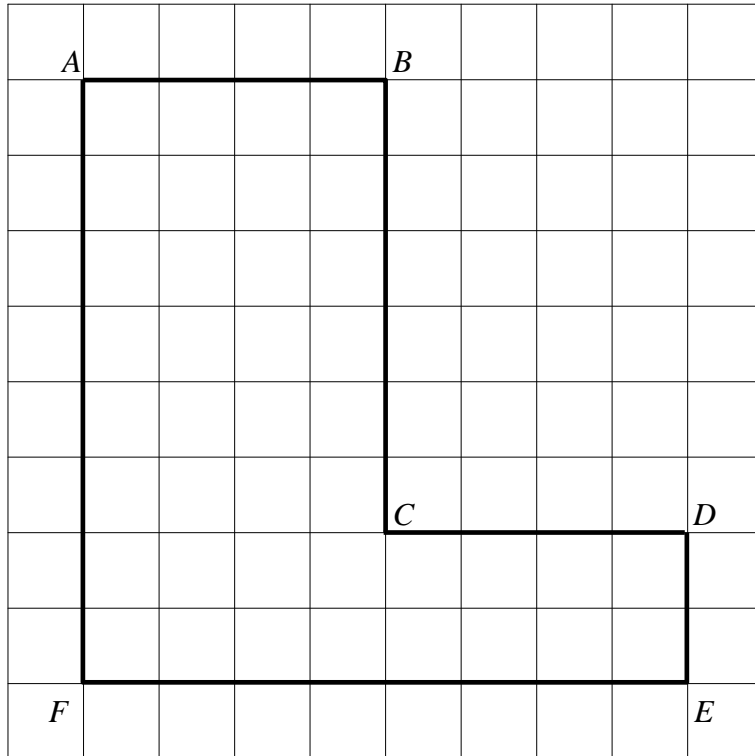


Volume of prism = area of cross-section \times length



Answer **all** questions in the spaces provided.

- 1 Shape $ABCDEF$ is shown on a centimetre grid.



- 1 (a) Measure the distance between B and D .

Answer cm (1 mark)

- 1 (b) Write down a line that is parallel to AB .

Answer (1 mark)

- 1 (c) Write down a line that is at right angles to DE .

Answer (1 mark)

- 1 (d) Work out the area of the shape $ABCDEF$.
State the units of your answer.

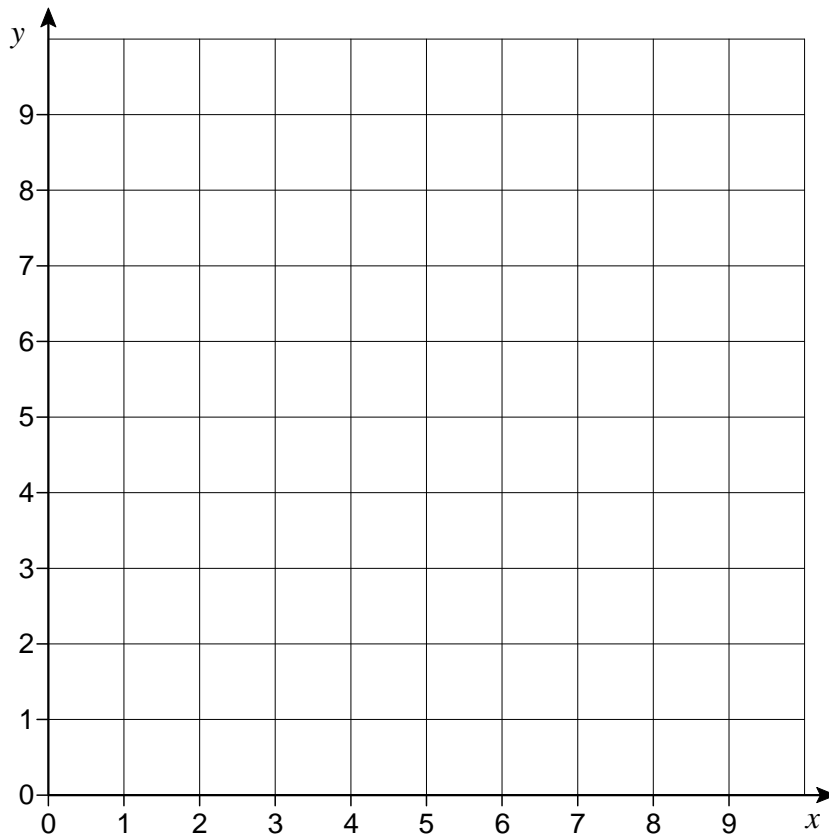
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Answer (3 marks)

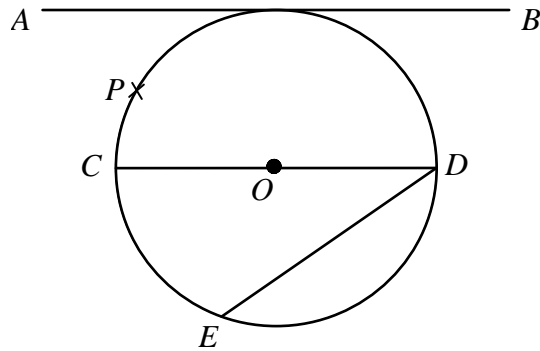
2 (a) Here is a centimetre grid.



On the grid draw a circle with centre at $(4, 5)$ and radius 4 cm.

(2 marks)

2 (b) The diagram shows a circle centre O .



Here are four words.

chord

circumference

diameter

tangent

Complete each of the following sentences by choosing the correct word.

CD is a of the circle.

Point P lies on the of the circle.

AB is a of the circle.

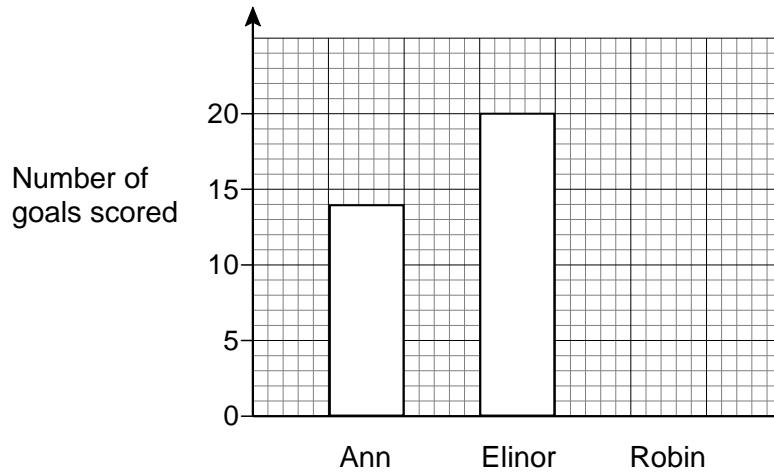
ED is a of the circle.

(3 marks)

3 Ann, Elinor and Robin play football for the school team.

3 (a) Robin scored 8 goals.

Draw the bar for Robin on the chart.



(1 mark)

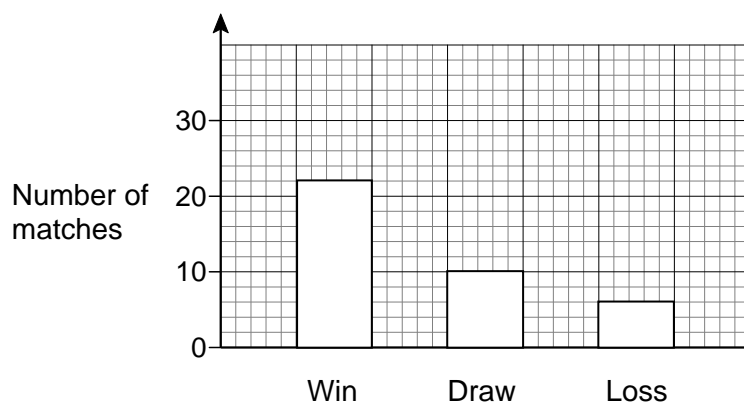
3 (b) How many goals did they score altogether?

.....

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Answer (2 marks)

3 (c) The bar chart shows information about the results of their matches.



A win scores three points.

A draw scores one point.

A loss scores no points.

Work out the number of points the team scored.

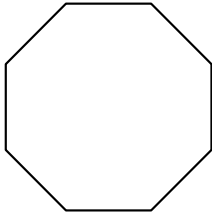
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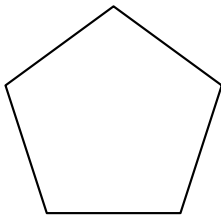
Answer (3 marks)

Turn over for the next question

4 (a) Write down the mathematical name of each shape.



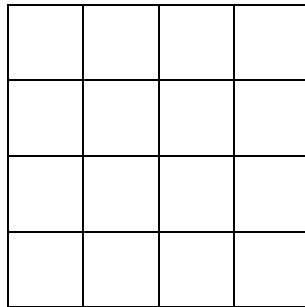
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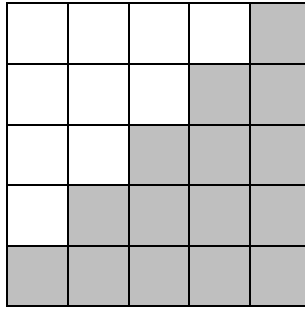
(2 marks)

4 (b) Draw a kite on this grid.



(1 mark)

5 (a) The diagram shows a grid.

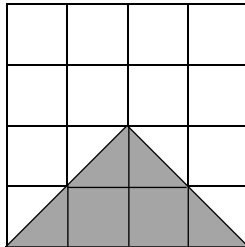


What fraction of the grid is shaded?
Give your answer in its simplest form.

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Answer (3 marks)

5 (b) This diagram shows a different grid.



What percentage of the grid is shaded?

.....
.....

Answer% (2 marks)

6 Here is a list of numbers.

2 9 20 28 32 43

6 (a) Write down the multiple of 7 from the list.

Answer (1 mark)

6 (b) Write down the square number from the list.

Answer (1 mark)

7 These are some factors of a number.

2 3 4 6 9 12

The number is less than 50

What is the number?

.....

Answer (2 marks)

8 Three different numbers add up to 90
All the numbers are even.

The second number is twice the first number.

The first number multiplied by the second number is equal to the third number.

Work out the three numbers.

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First number.....

Second number

Third number.....

(3 marks)

***9 (a)** Andy downloads songs onto his mobile phone.
His phone has 128 MB of memory.
Each song is 3.8 MB.

How many songs can he download?

.....

Answer (2 marks)

9 (b) Andy has 500 minutes of free calls in February.
Each minute above 500 minutes costs 15 pence.

The table shows the length of calls he made in the first three weeks of February.

	Week 1	Week 2	Week 3	Week 4
Length of calls (minutes)	135	96	211	

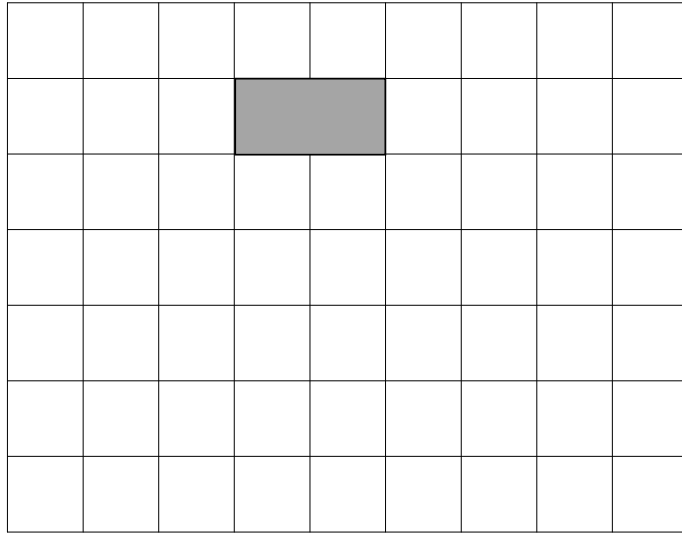
Andy can afford to pay £15 for calls in February.

How many minutes of calls can he afford to make in Week 4?

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Answer minutes (4 marks)

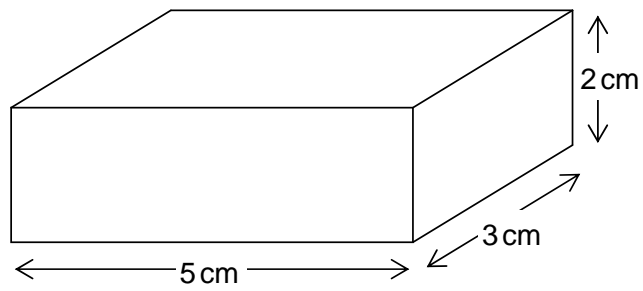
- 10 The diagram shows a rectangle on a grid.



Enlarge the rectangle by scale factor 2

(2 marks)

- 11 The diagram shows a cuboid.



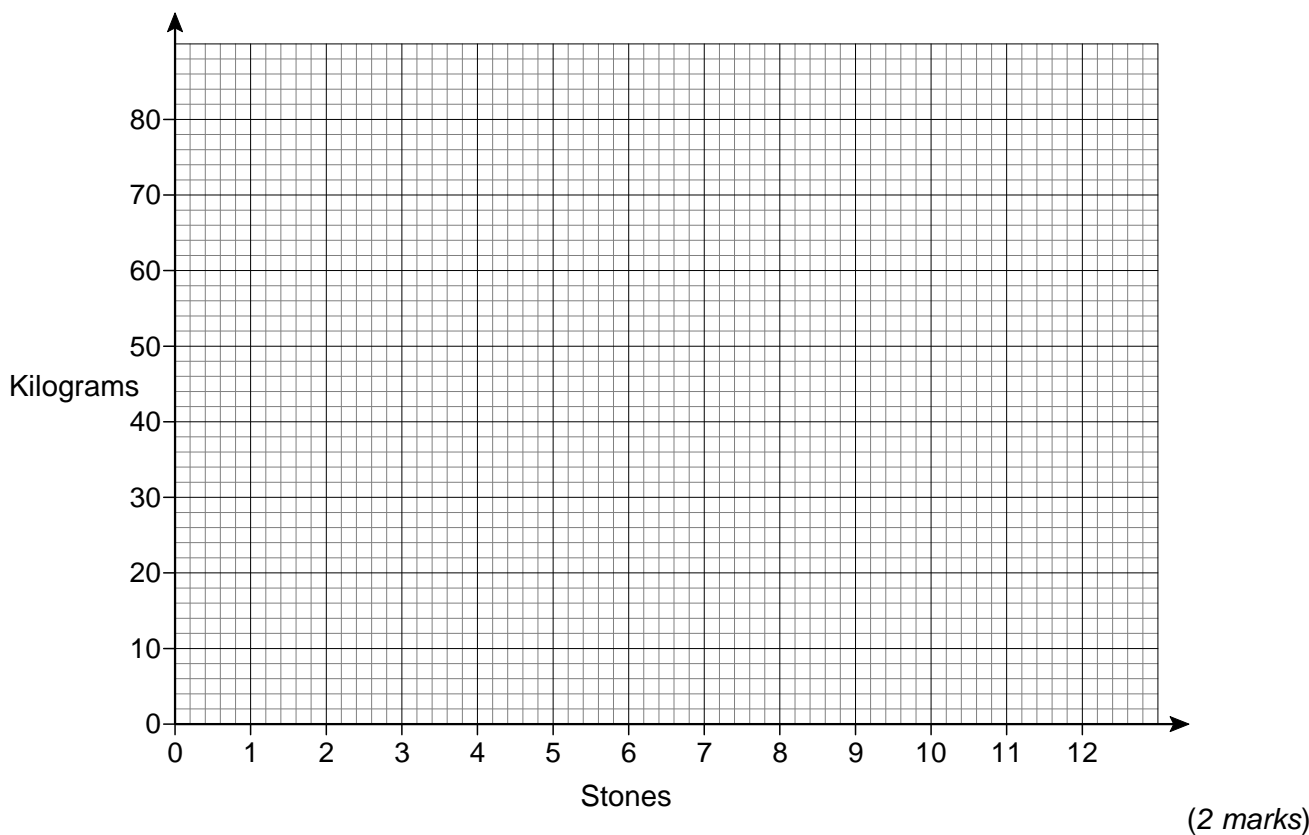
Draw an accurate net of this cuboid on the centimetre grid.



(3 marks)

12 You are given that 11 stones = 70 kilograms

12 (a) Draw a conversion graph on the grid.



(2 marks)

12 (b) Use your graph to convert 30 kilograms to stones.

Answer stones (1 mark)

12 (c) Simon weighs 15 stones.
He says this is 100 kilograms.

Is 100 kilograms more than or less than 15 stones?
Show clearly how you decide.

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(3 marks)

- 13 The table shows what Jane eats on one day of her diet.

Breakfast	Two slices of toast with marmalade A cup of coffee	355 calories
Lunch	Tuna salad A glass of orange juice	432 calories
Supper	Chicken breast with vegetables A glass of lemonade	805 calories

100 ml of milk has 55 calories.
A glass holds 300 ml.

Jane drinks $\frac{2}{3}$ of a glass of milk.

Her target is to have no more than 1700 calories each day.

Show that she almost meets her target.

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(4 marks)

Turn over for the next question

14 David uses this formula to work out his weight loss in kilograms.

$$\text{weight loss} = \frac{7 \times \text{number of days on diet}}{50}$$

14 (a) David plans to diet for 40 days.

How many kilograms should he lose?

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Answer kg (2 marks)

14 (b) His friend wants to lose 3.5 kilograms.

How many days should he diet?

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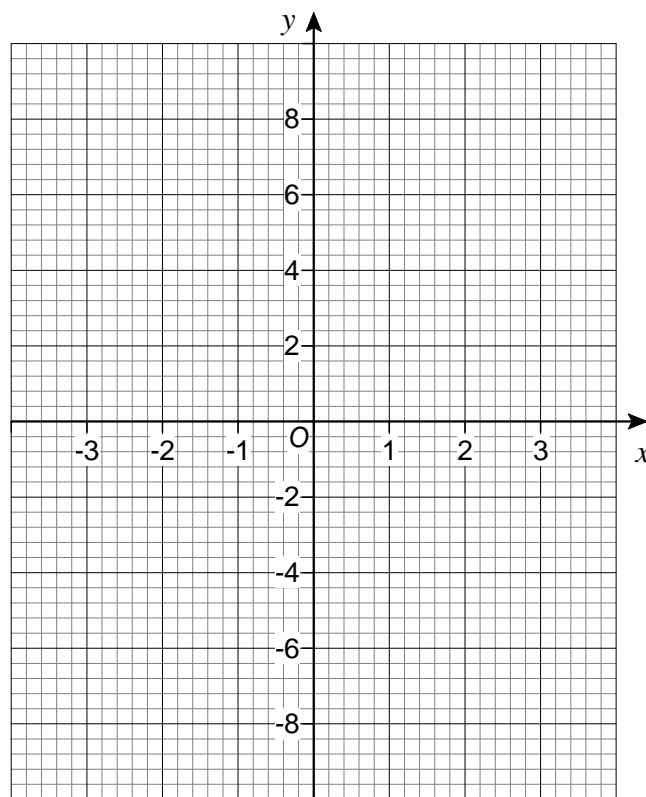
Answer (2 marks)

15 (a) Complete the table for the graph of $y = 2x - 1$

x	-3	-2	-1	0	1	2	3
y	-7		-3	-1	1		5

(2 marks)

15 (b) On this grid, draw the graph of $y = 2x - 1$ for values of x from -3 to 3



(2 marks)

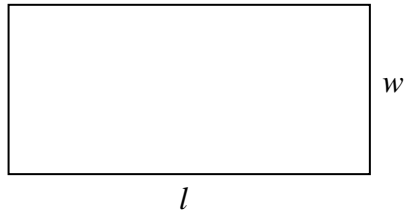
15 (c) Show that the point (7, 13) lies on the graph of $y = 2x - 1$

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(1 mark)

- 16** The perimeter of this rectangle is P .



- 16 (a)** Write down a formula for P , in terms of l and w .
Write your answer as simply as possible.

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Answer (2 marks)

- 16 (b)** The perimeter of a rectangle is 30 centimetres.
Its length is 9.5 centimetres.

Work out the area of the rectangle.

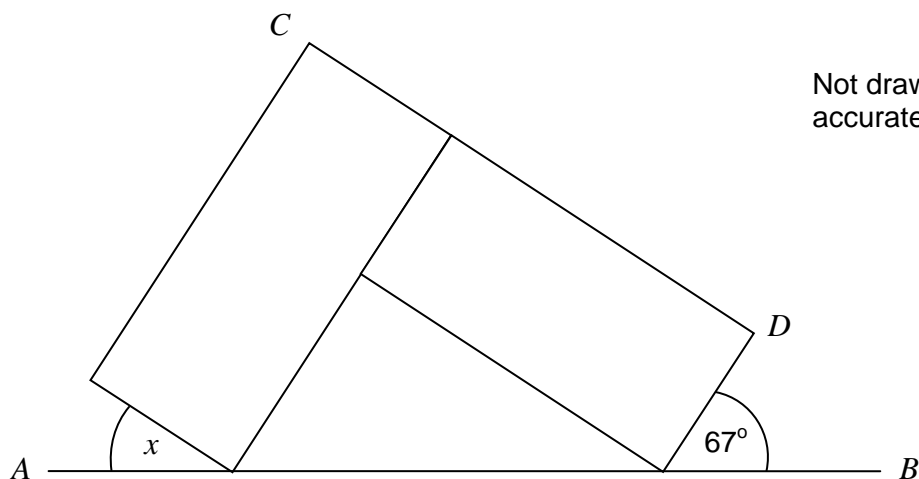
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Answer cm^2 (4 marks)

- 17 Two rectangles are joined, as shown in the diagram.



AB and CD are straight lines.

Work out the size of angle x .

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Answerdegrees (3 marks)

Turn over for the next question

- *18 (a) Mark wants to book a holiday for two adults and one child.
He sees this advert.

Adult price £340
Child price £250
Special offer 20% off

Mark has £750.

Can he afford to book this holiday?
Tick a box.

Yes

No

You **must** show your working.

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(5 marks)

- 18 (b) Mark wants to change £200 to Euros.

The exchange rate in the UK is £1 = 1.15 Euro
The exchange rate abroad is £1 = 1.13 Euro

How much more money will Mark get by changing his money in the UK?
Give your answer in Euros.

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AnswerEuros (3 marks)

19 Danielle tosses a coin and rolls a dice.

If the coin shows heads, her score is three times the number on the dice.
 If the coin shows tails, her score is the square of the number on the dice.

Show that there is a 50% chance of a score more than 10.

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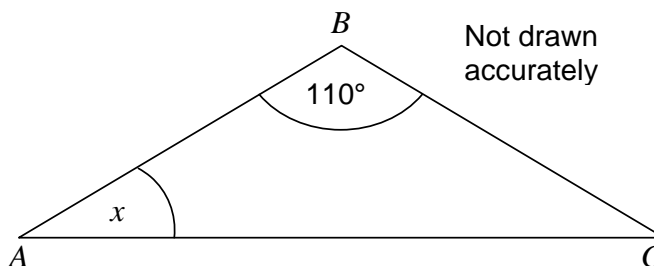
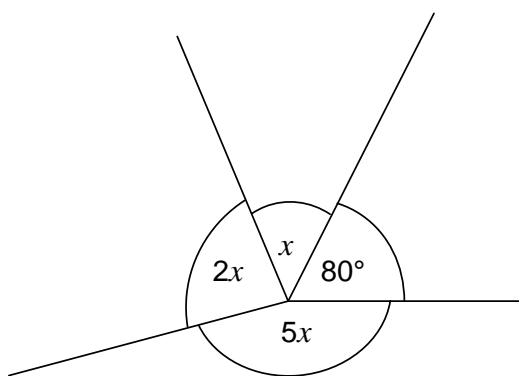
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(4 marks)

*20 ABC is a triangle.



Show that ABC is an isosceles triangle.

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(5 marks)

- 21** Amy wants to know how often people in her village go out for a meal. She writes this question and response section.

How many times do you go out for a meal?			
Never	1 or 2	3	More than 4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 21 (a)** Give **one** criticism of Amy's question.

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(1 mark)

- 21 (b)** Give **one** criticism of Amy's response section.

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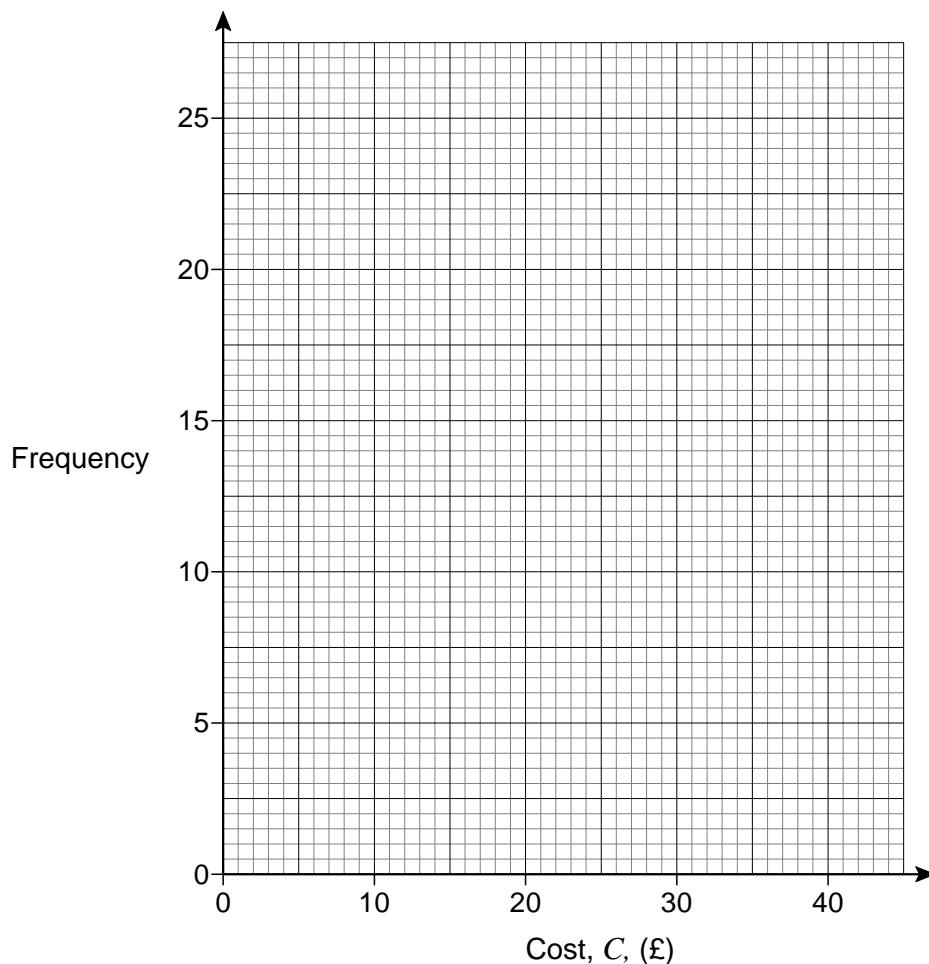
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(1 mark)

22 Here are the results of a survey about how much money 60 people pay for their meal.

Cost of a meal, C, (£)	$0 < C < 10$	$10 < C < 20$	$20 < C < 30$	$30 < C < 40$
Frequency	7	19	24	10

22 (a) Draw a frequency polygon to represent the results.



(2 marks)

22 (b) What proportion of the 60 people spend more than £20 on the meal?

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Answer (2 marks)

23 Divide 39 in the ratio 2 : 4 : 7

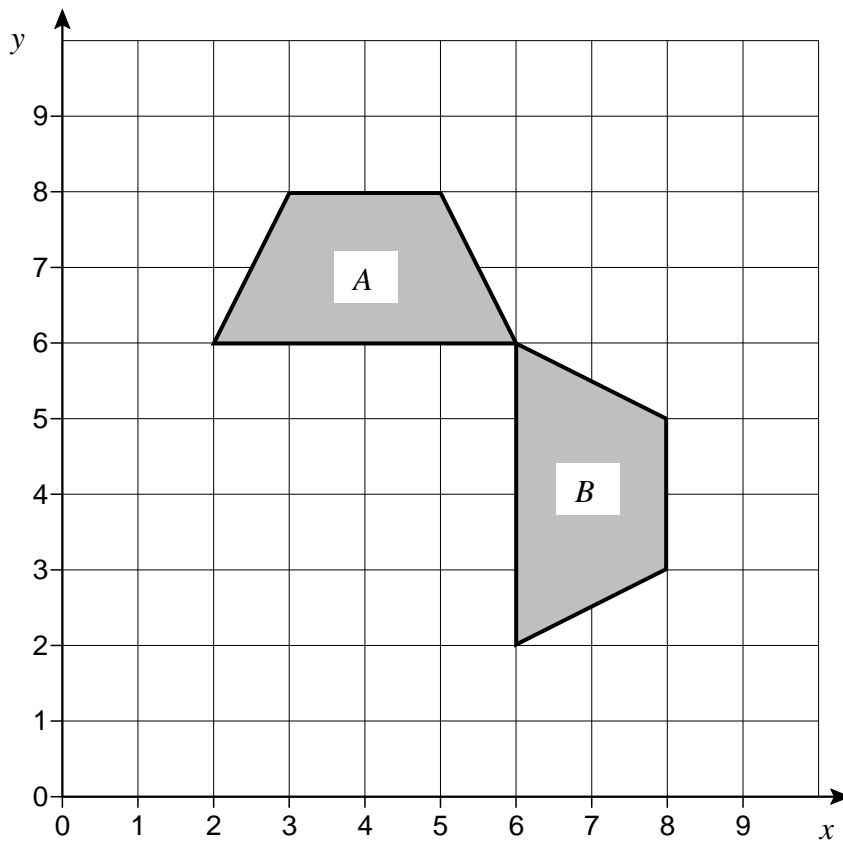
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Answer : :
(3 marks)

24 Describe fully the **single** transformation that takes shape *A* to shape *B*.



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(3 marks)

- 25** Dan runs 15 marathons.
Here is a summary of his times.

Time, t , (minutes)	Frequency		
$200 < t < 220$	1		
$220 < t < 240$	5		
$240 < t < 260$	6		
$260 < t < 280$	2		
$280 < t < 300$	1		

Ella also runs 15 marathons.
Her mean time is 4 hours 17 minutes.

Dan says that on average he is faster.

Show that he is correct.

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(5 marks)

11

END OF QUESTIONS

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED**